
Sustainable Spatial Solutions Flood Mitigation

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ABSTRACT

Flooding and regional spatial planning are two things that are closely related to each other, if regional spatial planning is carried out properly and correctly then flooding will not occur. However, a factual phenomenon that often occurs during the rainy season, the threat of flooding often overshadows residential areas, and during the dry season, many areas experience drought in agricultural areas. The aims of this writing are: 1) to obtain the results of a sustainable spatial planning analysis that can be a solution for flood management, and 2) to obtain the results of a spatial planning analysis in an area that can be audited when a flood disaster occurs. The research method used is to use a socio-juridical approach (socio-legal), this research is supported by a statutory approach (statute approach), historical approach (historical approach), and conceptual approach (conceptual approach). In general, this research is analytical prescriptive. The results of this study are as follows. **First.** As a form of sustainable spatial planning solutions for flood management, there are five steps that can be taken, namely: 1). conduct an audit of space or land use in accordance with the functions and designations in the RTRW, master plan, RDTRK. 2). check the legality of the land/house. 3), the government, academia, the public and experts are expected to sit together to formulate directions and strategies that can be implemented to find a win-win solution for flood management. 4). Regional governments can normalize rivers, canals, revitalize lakes, lakes, reservoirs, and save beaches and mangrove forests whose land has been converted, and 5). The local government needs to carry out social engineering for residents who live close to water conservation areas. **Second.** In connection with this phenomenon, there are several audit steps to handle spatial planning, namely: 1) Conducting spatial audits in the form of evaluations related to the suitability of RTRW, RDTR, and RTBL spatial utilization activities. 2) The central government conducts an audit of compliance with spatial planning within the scope of the province. 3) The central government prepares and reports audit results and publishes them to the public. 4) The regional government must control and take action against those who violate the spatial plan. 5) The regional government conducts building and environmental audits, preferably for downtown areas which are seen as conformity with the basic building coefficients, availability of green basic coefficients. 6) The local government revitalizes existing channels throughout the city, both rivers and ditches, which may cause flooding or inundation.

Keywords: Spatial Planning, Flood.

I. Introduction

Spatial planning and the living environment can be said to be two things that are closely related to one another. Currently, spatial planning/development is carried out solely as physical development without paying attention to the unique environmental behavior in an area. Development carried out solely by prioritizing physical and deterministic aspects is currently being rejected because it does not pay attention to the uniqueness of human behavior in it. The existence of humans in the environment influences and is influenced by the network of life, and this in turn forms culture.¹

If you look at the current activities in the region, it can be said to be a nightmare, where currently everywhere the designs, faces and colors in urban areas are almost the same. The constituent elements that can be said to be natural seem to no longer exist. Chaos occurs everywhere with problems becoming more and more complicated and difficult to resolve. There are many factors that of course need to be taken into account regarding the development or arrangement of an area, apart from physical factors, of course humanistic factors also absolutely need to be taken into account in order to achieve beauty and harmony between the living environment within it.

"Open Ended" Planning. Nowadays, space planning can be said to be one of the rigid things whose implementation only talks about physical, physical and physical matters. However, it rarely involves or includes the human element in it. Many people think that space planning must be planned and implemented strictly and in accordance with the initial design. This of course gives the impression of being rigid and naturally unable to keep up with developments in the uniqueness of the community.

The community, which is the main object and subject in regional development, can be said to be the most important part that needs to be fully invited or involved. Because it is from this community that the desired face of development will be formed.

¹ Eka Auriah Djasrian, *Budaya – Ruang Kontestasi dan Konflik*, Lapataru, Jakarta, 2022, hal.-22.

Humans who occupy the living environment within them have the desire and need to manage the environment around them according to their wishes. Because naturally humans and nature have a deep connection, as guardians and supervisors of the development of the environment around them. However, several weaknesses in current planning are long-term oriented and rigid. So that during the journey, sometimes it doesn't go according to what was planned at the beginning, it tends to change due to the uncertainty that exists therein. Community involvement to create regional development and a good life needs to be initiated and prioritized in order to create a comfortable and safe, productive and sustainable environment for the people who live in it. It is hoped that community involvement in community development can encourage existing monitoring activities to control regional growth and development which is increasingly leading to increasingly complex areas.

Research Purposes:

- 1) to obtain the results of a sustainable spatial planning analysis that can be a solution for flood management.
- 2) to obtain the results of a spatial planning analysis in an area that can be audited when a flood disaster occurs.

Research Methods:

The research method used is to use a socio-juridical (socio-legal) approach using an interdisciplinary or hybrid approach between aspects of normative legal research and a sociological approach using qualitative analysis, namely by analyzing data in depth and holistically.

This research is supported by a statutory approach, a historical approach and a conceptual approach. In general, this research is descriptive analytical in nature. This type of research: Fundamental Research, namely research-oriented research designed to secure an in-depth understanding of law as a social phenomenon, including research on historical, philosophical, economic, social and political impacts.

II. Discussion

A. Sustainable Spatial Planning for Flood Management Solutions

The nature of water is a gift that deserves good treatment from living creatures on this earth. With good treatment, a good balance will be achieved between water and living creatures which can support the healthy functioning of the ecosystem within it. Harmonization of water resources needs to continue to be improved, with the support of the community and government so that rivers, lakes, reservoirs and other water reservoirs are not converted.

The public is expected not to clear land that functions as a catchment (protected) area, not to throw rubbish, household waste or industrial waste into water bodies. To do this, reorganize how efforts can be made to reduce or even eliminate these problems, which must refer to the law on water resources management, the law on spatial planning and the law on environmental protection and management.

Regional governments are obliged to reorganize regional space and create a water-friendly environment in a sustainable manner. There are five steps that can be taken, namely:

1. First, check the applicable regulations. Space or land utilization audits can be carried out in accordance with applicable regulations such as RTRW, master plan, RDTRK and others. This is to find out where the problems are and map land use incompatibilities, especially for areas protecting water sustainability.
2. Second, check the legality of the land/house. This step is deemed necessary so that if the government finds many violations regarding the use of space in water resources conservation areas, action can be taken in accordance with applicable laws or regulations. Such as land use on river borders, coastal borders and other borders
3. Third, the government, academics, society and experts are expected to sit down together to formulate directions and strategies that can be implemented to find a win-win solution for all parties. The community is also given direction and understanding to move from locations that are considered problematic and not suitable for their intended purpose.

However, the government must also provide new residential relocation sites that are equipped with appropriate facilities and infrastructure for relocated residents.

4. Fourth, local governments can normalize rivers, ditches, revitalize lakes, lakes and reservoirs, as well as save beaches and mangrove forests whose land has been converted. The river can be widened to 2 or 3 times its original size and dredged to add more depth to the river. By dredging the reservoir and lake, the capacity will be optimal and a park will be provided around it to help absorb water into the ground.
5. Fifth, the local government needs to carry out social engineering on residents who live close to water conservation areas such as river banks, beaches and so on so that they change old habits such as littering and throwing waste water into rivers so that these habits can be gradually reduced or even eliminated. that bad. Residents are invited to play an active role in managing and maintaining the environment around where they live, so that when it rains there are no longer the feared floods.

The environmental crisis is no longer a future threat, but has become a contemporary reality that exceeds the limits of environmental tolerance and adaptability, for example environmental damage due to flood disasters. Floods and regional spatial planning are two things that are closely related, if regional spatial planning is implemented properly and correctly then flooding will not occur. During the rainy season, the threat of flooding often looms over cities in Indonesia today. However, what is strange is that during the dry season, many areas experience drought.

Regional spatial planning that is not balanced with good water management will have detrimental impacts that can threaten human activities. The understanding of the old paradigm that continues to develop in society and even in government is how rainwater is considered a disaster, is considered a disaster and is considered to cause problems. This can be seen from the government's reaction which is trying to accelerate the flow of water from the drainage to the river which is the main network as well as by blocking the river so that the water that falls can be immediately channeled to the river and downstream.

However, along the way, there are many spaces such as drainage and river bodies that do not function as they should. People throw rubbish and household waste into rivers, increasing deposits of sand and other rubbish in drainage channels and other problems give the impression that when it rains, disaster begins. Catastrophe is just an opinion of society itself which is formed as a result of the behavior carried out in dealing with existing environmental problems.

Ideally, water is a gift, sustenance and mercy sent down by Allah SWT which we need to treat well. It needs to be managed well through infiltration in green open spaces and other infiltration spaces as an impact on reserving groundwater for our future needs. Rain is not a disaster, with rain, efforts to save and reserve groundwater can be done easily by simply providing sufficient infiltration land.

The government and community do not need to be too quick to channel water into rivers, so that rainwater can be managed and utilized first by the community. This needs to be supported by the provision of land specifically designated as infiltration land. Such as the use of river border areas as local protection areas, green open spaces, coastal areas where property is not allowed to be built and other actions that can support the implementation of good water management. Of course, this can be realized if there are violations regarding the use of space for water management which should be prosecuted in accordance with applicable spatial planning regulations. In its development, the Government's involvement in carrying out regulatory and supervisory functions various activities, various problems and sometimes conflicts occur between the Government and the community in the field.²

Several suggestions for future planning include: first, long-term problem solving needs to be combined with short-term, incremental problem solving.

² Sadino, *Mengelola Hutan Dengan Pendekatan Hukum Pidana Suatu Kajian Yuridis Normatif (Studi Kasus Provinsi Kalimantan Tengah)*, BKH Kementerian Kehutanan, Jakarta. 2010, hal-2.

Second, the implementation of incentives and disincentives to uphold the direction of development being implemented. Third, total, even and integrated spatial planning using participatory planning models. Fourth, the socio-cultural sensitivity of policy makers needs to be increased, so that community involvement through discussions, forums or other means can be further achieved. Fifth, the planning carried out should pay attention to natural and climatic conditions to create a comfortable environment and save energy.

B. Post-Flood Spatial Planning Audit

The occurrence of floods in big cities such as Jakarta, Manado, Tomohon, Bandung, Semarang, Malang including Banjarmasin and several other areas that experienced similar things should be used as material for reflection and evaluation. How could it not be, this refers to the government and community's efforts to maintain the quality of the existing environment in relation to whether the development carried out so far is in accordance with or even deviates from the planned spatial plan.

Spatial planning that is not in balance with nature and water conservation efforts is one of the causes of many flood and similar disasters. Apart from being affected by flooding, the community also feels the water crisis caused by development that damages water sources and water flow channels. This is made worse by the absence of control regarding enforcement of land use for development activities around rivers, lakes, lakes and the like.

In connection with this phenomenon, there are several audit steps to handle spatial planning, namely:

1. Conduct a spatial planning audit, namely carrying out an evaluation regarding the use of space whether it is in accordance with the RTRW, Detailed Spatial Planning Plan (RDTR), or Building and Environmental Planning Plan (RTBL).
2. The central government carries out an audit of conformity with provincial spatial planning which has been mandated in a presidential regulation.
3. The central government compiles and reports audit results and publishes them to the public. As well as determining incentive and disincentive mechanisms for areas that are in accordance or not in accordance with the spatial plan.

4. The local government must carry out control and take action against people who violate spatial planning. If necessary, relocation and so on can be carried out immediately to maintain the existing balance.
5. The local government carries out building and environmental audits, preferably for city center areas, to see whether they comply with the basic building coefficient, whether they have provided 30 percent for the basic green coefficient or not
6. The local government is revitalizing existing channels throughout the city, both rivers and ditches, which can cause flooding or inundation. For village areas, it can be conceptualized as community service.

The implementation of development in each region tends to give rise to shared problems and conflicts over the use of space which seeks to use space in a balance between needs and ecology. Limitations are one of the causes of problems that arise in the activities involved. Limited land cannot keep up with the increasing need for building construction ranging from housing, trade and service areas, industry and other activities. Meanwhile, on the other hand, institutions tasked with environmental conservation say that there is a need to conserve open areas in the form of green open spaces, urban forests, green belts and other types of open spaces. Of course, looking at the availability of existing land, it is not certain that it can fulfill both, not to mention if the population growth factor is included. Currently, management is still sectoral, partial and depends on the decisions of each region, so it is very difficult to penetrate administrative boundaries to create regional synergy and balance that is not only limited to administration anymore.

Environmental management basically has several processes which are included in it as a single unit whose implementation must be systematic and coherent. In spatial planning, support is needed related to describing the environmental order, environmental carrying capacity, quality standards, conservation of natural resources, and integration related to natural resources, human resources and supporting infrastructure. This is to produce a spatial arrangement that has high quality. Meanwhile, in implementing sustainable

development and good environmental quality, an AMDAL study is needed which looks at the existing quality standards and environmental conditions. The preparation of AMDAL as an instrument for environmental management is a form of embodiment of the concept of sustainable development. In terms of spatial planning, there are several rules that must be taken into account, such as spatial planning, space utilization and controlling space utilization.

III. Closing

1. Floods and regional spatial planning are two things that are closely related, if regional spatial planning is implemented properly and correctly then flooding will not occur. During the rainy season, the threat of flooding often looms over residential areas, but during the dry season, many areas experience drought in agricultural areas. Regional governments are obliged to reorganize regional space and create a water-friendly environment in a sustainable manner. There are five steps that can be taken, namely: First, conduct an audit of space or land use in accordance with the function and designation of the RTRW, master plan, RDTRK. Second, check the legality of the land/house. Third, the government, academics, society and experts are expected to sit down together to formulate directions and strategies that can be implemented to find a win-win solution for dealing with floods. Fourth, local governments can normalize rivers, ditches, revitalize lakes, lakes and reservoirs, as well as save beaches and mangrove forests whose land has been converted. Fifth, the regional government needs to carry out social engineering on residents who live close to water conservation areas such as riverbanks, beaches and so on so that they change old habits such as littering and throwing waste water into rivers so that these bad habits can be gradually reduced or even eliminated.
2. In connection with this phenomenon, there are several audit steps to handle spatial planning, namely:
 - a. Carrying out spatial planning audits in the form of evaluations related to the suitability of space utilization activities with both RTRW, detailed spatial

- planning plans (RDTR), and building and environmental planning plans (RTBL).
- b. The central government carries out audits of conformity with provincial spatial planning.
 - c. The central government compiles and reports audit results and publishes them to the public. As well as determining incentive and disincentive mechanisms for areas that are in accordance or not in accordance with the spatial plan.
 - d. The central government compiles and reports audit results and publishes them to the public. As well as determining incentive and disincentive mechanisms for areas that are in accordance or not in accordance with the spatial plan.
 - e. The regional government must carry out control and take action against people who violate spatial planning. If necessary, relocation and so on can be carried out immediately to maintain the existing balance.
 - f. The local government carries out building and environmental audits, preferably for city center areas, which look at whether the building has provided 30 percent of the basic green coefficient or not.
 - g. The local government is revitalizing existing channels throughout the city, both rivers and ditches, which can cause flooding or inundation. For village areas, it can be conceptualized as community service.

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